

# PEGASUS® *MiniECO*

**6-channel Digital Dimmer**

**User's manual**

Second edition

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**Dear Customer!**

Thank you for chose PLS Electronics product. If you have any technical question or you looking for other equipments, don't hesitate to take up the contact with our sales representative or with the manufacturer at the [www.pls.hu](http://www.pls.hu) web site.

This apparatus is a six channel digital dimmer with DMX 512/1990 or 0-10V control (optional) with additional control possibilities. The light control is produced by a phase angle control technology.

**Safety first! Please read carefully and understand the user manual!**



**The wrapper of the unit is NOT baby toy!**

**Keep it away form babies!**



For technical questions and *original spare parts*  
please take up the contact with our sales representative or with the  
manufacturer at the [www.pls.hu](http://www.pls.hu) web site.



**ATTENTION!**

**DON'T USE WITHOUT PROTECTIVE GROUND!**



Not allowed to make a parallel connection between any outputs  
(phases or neutrals) to increase the output current capability of the  
unit! Otherwise the unit can be damaged!



**CAUTION!**

**Do not cover any air inlets and fan outlets of the dimmer!**



**Take care to have proper airflow in and out to let cooling the unit.**

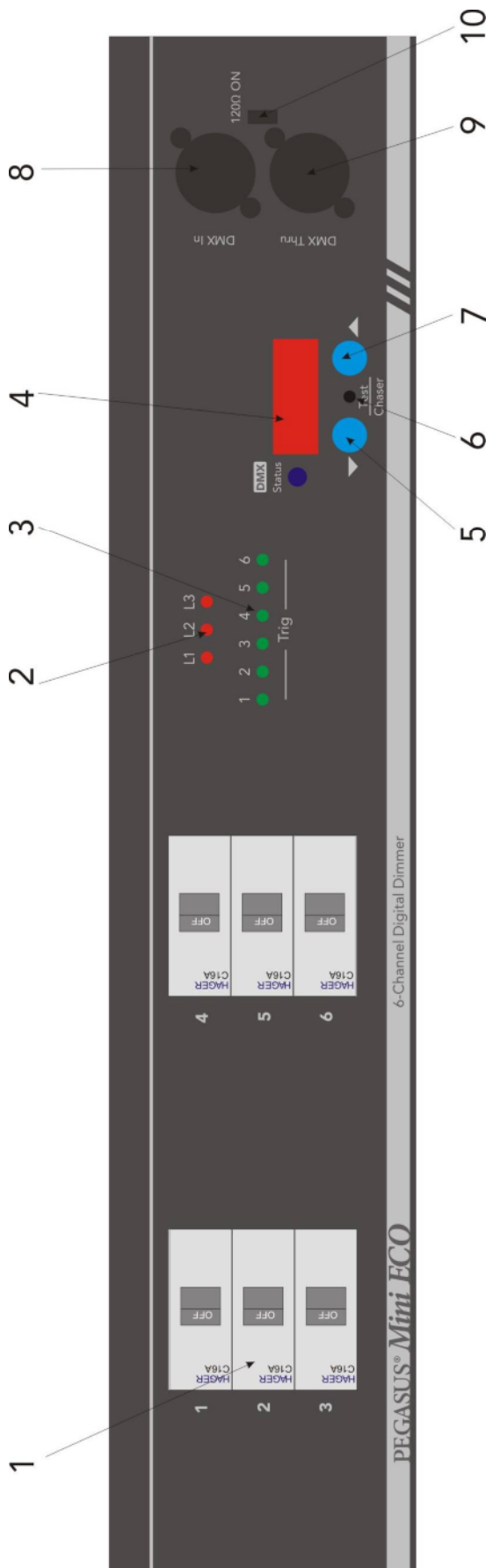


**CAUTION!**

**Disconnect mains before open the dimmer for service!**



**Service allowed only for technicians who had technical course by the sales  
representative or by the manufacturer!**

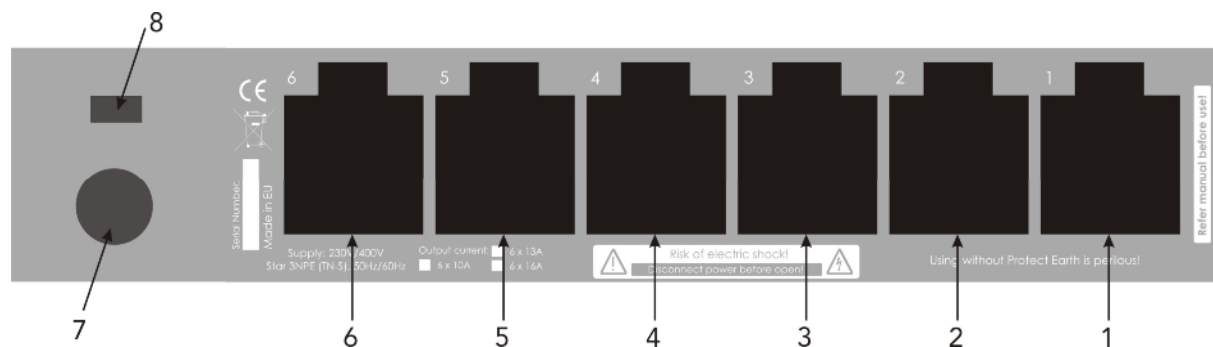


**Figure 1. Handling units of front part**

### Front parts

1. Circuit breakers to protect the outputs.
2. Phase / module good indicators. If it is light, the phase unit is working.
3. This green LEDs show the control levels of the channels.
4. DMX display. Here you can see basically the start address of this apparatus on the DMX line. Next to it there is the DMX control blue LED (If it's flashing, the DMX pocket is correct; when ON, the dimmer is on Test or Chaser mode, when OFF, the DMX pocket is incorrect or not present.)
- 5/7. **Down / Up** buttons. In DMX receiving mode (normal dimmer state) with this button you can set the start address of the unit. In **Test** mode you can chose which channel you want to test. In **Chaser** mode you can reduce the speed of the chaser effect with the **Down** button; with the **Up** button you can select the number of the chaser program.
6. **Test/Chaser** button. If you push ones the selected channel of the dimmer is increasing automatically from 0% to 100%. If the display indicates "00", all channels are go 0% to 100%. By pressing this button again the dimmer goes to **Chaser** mode (see later). Push the Test button again, and the dimmer goes back to normal dimming operation.
8. DMX input via male XLR connector.
9. DMX throughput via female XLR connector
10. **120 Ohm** DMX line termination switch. Switch it to ON position only if this unit is the last on the DMX line! Otherwise left it in OFF position!

On Figure2 and Figure3 you can find the outlet of the backside connectors of the one output per channel versions like **ME6xx-S** (Schuko), **ME6xx-F** (French/Belgian CEBEC), **ME6xx-C** (CEE16/3), **ME6xx-PC** (PowerCon) and **ME6xx-WL** (Wieland ST17) dimmer

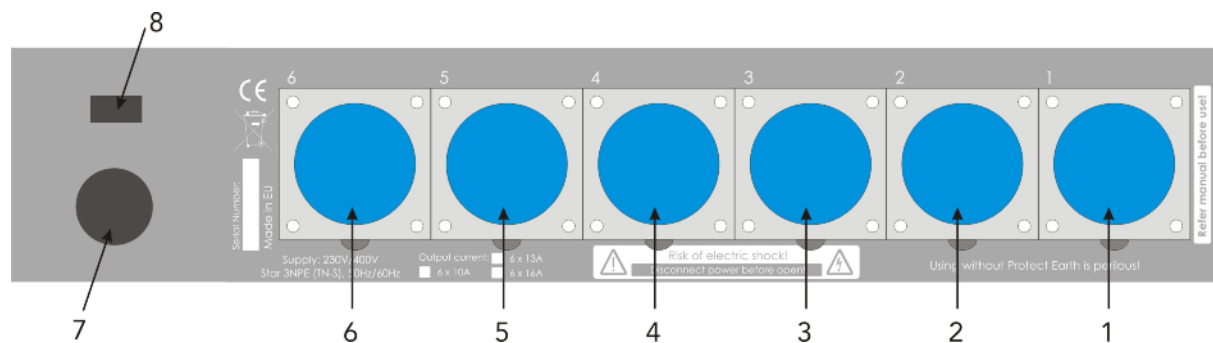


**Figure 2. Back part connectors (Schuko, CEBEC, Swiss, Danish and UK BS1363)**

1-6. Outputs of the channels from 1 to 6.

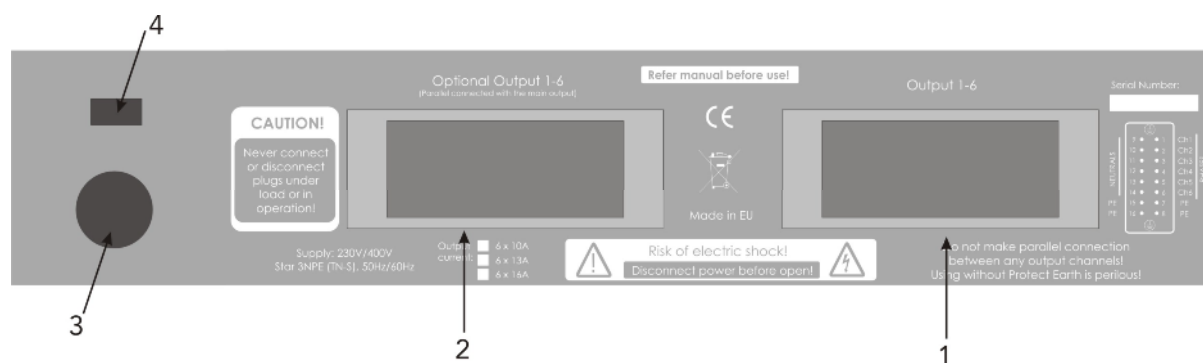
7. 3 x 32A input mains cable (H07 rubber; 5x4mm<sup>2</sup>) with CEE male plug

8. Analogue input via 9 pole SUB-D male connector (optional).



**Figure 3. Back part connectors (16A 3P CEE form)**

Outlet of the backside connectors of the **ME6xx-H1(D)** and **ME6xx-H2(D)** dimmer:



**Figure 4. Back part connectors (16-pole 'Harting/ILME' type)**

1. Outputs for the channels 1 to 6 (main socket for outputs).
2. Optional socket which one connected parallel with the main output socket.
3. 3 x 32A input mains cable (H07 rubber; 5x4mm<sup>2</sup>) with male CEE plug.
4. Analogue input via 9 pole SUB-D male connector (optional).

The pin outlet of the 16-pole 'Harting' type connectors in **H1 and H2 versions** is the follows:

Pin number	Function
1, 2, 3, 4, 5, 6	Output <b>Phases</b> for channel 1,2,3,4,5,6 respectively
9, 10, 11, 12, 13, 14	Output <b>Neutrals</b> .
7, 8, 15, 16 and the side connectors	<b>PROTECTIVE EARTH (PE)</b>

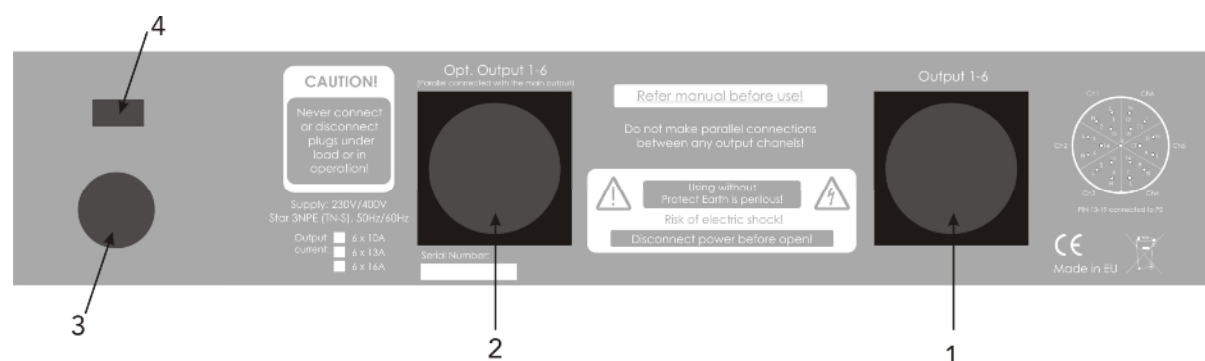
The pin outlet of the 16-pole 'Harting' type connector in **H1D and H2D versions** is the follows:

Pin number	Function
1, 3, 5, 7, 9, 11	Output <b>Phases</b> for channel 1,2,3,4,5,6 respectively
2, 4, 6, 8, 10, 12	Output <b>Neutrals</b> .
13, 14, 15, 16 and the side connectors	<b>PROTECTIVE EARTH (PE)</b>

Recommended 16-pole male plug (optionally orderable from PLS):

**Male insert:** HDC HE 16 MT (Tension clamp, Weidmüller order no.: 1745840000)  
or HDC HE 24 MS (Screw connection, Weidmüller order no.: 1207500000)  
**House:** HDC 16B TOBU 1M25G (M25 cable gland Weidmüller order no.: 1788210000)

Outlet of the backside connectors at **ME6xx-SX** and **ME6xx-SX2** dimmer:



**Figure 5. Back part connectors (2x19-pole 'Socapex' type)**

1. Outputs for the channels 1 to 6 (main socket for outputs).
2. Optional socket which one connected parallel with the main output socket.
3. 3 x 32A input mains cable (H07 rubber; 5x4mm<sup>2</sup>) with male CEE plug.
4. Analogue input via 9 pole SUB-D male connector (optional).

The pin outlet the 19-pole 'Socapex' type connectors is the follows:

Pin number	Function
1, 3, 5, 7, 9, 11	Output <b>Phases</b> for channel 1,2,3,4,5,6 respectively
2, 4, 6, 8, 10, 12	Output <b>Neutrals</b> .
13, 14, 15, 16,17,18,19	<b>PROTECTIVE EARTH (PE)</b>

Recommended male plug (optionally orderable form PLS):

**Male inline plug:** P19-LM-S-M40A (solderable, for cable OD 16-28mm)

Outlet of the backside connectors at **ME6xx-STB** dimmer:



**Figure 6. Back part connectors (Screw terminal block input/outputs)**

1. Outputs for the channels 1 to 6. Max wire cross section is 4mm<sup>2</sup>.
2. Mains input. Max wire cross section is 6mm<sup>2</sup>.
3. Analogue input via 9 pole SUB-D male connector (optional).

**CAUTION!**

**Installation of this dimmer version needs a trained service person.**

Take extra care at the installation of the PE, Live and Neutral connections.

The Grey terminals always for LIVE (Line voltage)

Blue ones for the NEUTRAL

Green/Yellow ones for the Protect Earth!



Wrongly connected input mains or outputs can damage the dimmer and the loads!

## 2. Installation of the unit

After unpacking the apparatus is ready for use. **Not to make the cable longer! If it is short, use standard extension. Operating with injured cable is perilous!**



### **CAUTION!**



**The apparatus is NOT waterproof! Protect it from liquids!**  
**Not to use outdoors without appropriate preventive measures.**  
**If water or other liquid getting into it, dry up, and take to technician!**  
**Working with wet apparatus is PERILOUS!**

The unit has been shipped with 5x4mm<sup>2</sup> H07 rubber cable with CEE male plug (except screw terminal block type models). The correct order of the power cable is the follows:

Cable color	Function
Grey	Line 1 (L1 or R)
Black	Line 2 (L2 or S)
Brown	Line 3 (L3 or T)
<b>Blue</b>	<b>NEUTRAL (N)</b>
Green/Yellow	Protect Earth (PE)

### **CAUTION!**

**The manufacturer doesn't responsible if the installer/user connect the cable wrongly! The guaranty will be void if the connection order is wrong and the unit can damage too!**

**Before power up, always control the right connection of the Lines, Neutral and the Protect Earth!**



**Consult with the manufacturer or**

**with trained service person if you need help in installation!**



The unit is able to control 6x10A, 6x13A or 6x16A (depends on the dimmer model). The input L1, L2 and L3 lines are connected to the channels as the follow:

Channel 1 and 4 to **L1**; Channel 2 and 5 to **L2**; channel 3 and 6 to **L3**

If necessary the dimmer can be powered from only one phase (L1, L2 and L3 inputs are powered from the same phase). Please consider that in this case the maximum input power is **1x32A** in all models!



**These are the absolute maximum ratings!**  
**If you overdrive, the dimmer can DAMAGE!**





### 3. Analog control (optional)

The functions of the SUB-D connector pins are in the following table:

Pin N°	Function
1-6	1-6 Channel IN
7	Analog mode enable input (connect it to GND)
8 and 9	GND

**The pin 7 must be connected to GND to enable the analog control!** (Just connect the pin 7 to the pin 8.) While the analog control is enabled, the dimmer receive data from the DMX line and the operation is in HTP (highest takes precedence) priority.

It means if your analogue input for the corresponding channel is higher than the DMX value for that channel the control given to the analogue for that output. Otherwise the DMX data is used to control that channel.

For the analog control cable use a standard low-voltage multicore wire **with shield**. Be the cable the shortest as possible. The necessary connector type is the SUB-D 9 pin female with house.

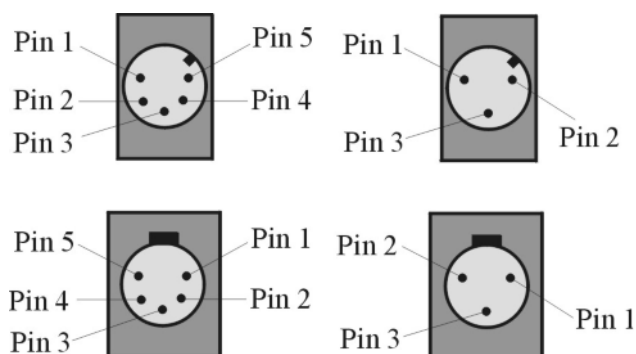
### 4. Digital Control

#### 4.1 DMX input

The DMX input signal must be connect to the DMX In marked connector, which can be found on the front side of the dimmer. **If this unit is the last one on the DMX network chain you must take the termination switch on the front panel to “Term On” position on the font panel. Otherwise left it at the other position!**

Pin Number	Function
1	Ground (Shield)
2	Data (-)
3	Data (+)
4	Spare Data (-) NC
5	Spare Data (+) NC

**Table 1.** Functions of XLR pins



**Figure 5.** Outlet of the connectors (front view, the male connectors in the upper line)

**The DMX input of the dimmer is power and opto isolated!**

**Not recommended to connect the Pin 1 to the Protect Earth (PE)!**

The DMX Throughput is **not isolated** from the DMX input and **not refreshed!**

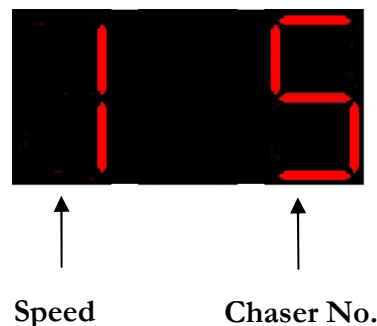
The DMX start address can be select with two blue buttons on the front panel. The left side button [5] is decrease, the right one [7] is increase the DMX start address of the dimmer. If you hold down one of the buttons, the address is increment/decrement automatically. After the last button press, the dimmer saves the selected address within 5 seconds. The saving is indicated with a three times flash of the display (no dimming while saving!). On the next power on, the saved DMX address will restore.

#### 4.2 Testing the outputs (TEST Mode)

To go to TEST function, press the **Test/Chaser** button [6] on the front panel. If you push ones the level of the selected dimmer channel is increasing automatically for 0% to 100%. Use the **Up/Down** keys [5,7] to select other channel. If the display indicates “00”, all channels are go 0% to 100%. By pressing the **Test/Chaser** button again, and the dimmer goes to **Chaser mode**.

#### 4.3 Chaser running (CHASER Mode)

In this mode (second pressing of the Test/Chaser button [6]) the dimmer can work in stand-alone mode. There are three fix level scenes (30%, 60% and 100% for all channels) and six running scenes with adjustable speed. When the dimmer is in this mode, you can see on the display two digits like this:



The left one shows the speed of the chaser effect (1 means the fastest, 9 the slowest). You can adjust this with the **Down** button [5] below the display. The digit on the right side shows the number of the selected Chaser effect (1 to 3 are the fix scenes, 4 to 9 are running scenes). You can select the Chasers with the **Up** button [7] below the display.

To go back the normal operation (dimming mode) press again the **Test/Chaser** button [6].

### **Technical information**

Power supply: ..... TN-S 3x230V/400VAC  $\pm 10\%$   
(3 x 32A)

Power draw with open outputs: ..... 6W

Output connectors: ..... 6 x Schuko (-S), 16-pole 'Harting' F (-H);  
19-pole 'Socapex (-SX), 6 x CEE16/3P (C)  
6 x Neutrik PowerCon 16A (-PC)

Input connectors: ..... Amphenol 5 pole XLR male

Noise filters: ..... Toroidal HF filters at all ch. ( $t_r=100\mu s \pm 5\%$

Output protection: ..... C10A, C13A or C16A circuit breakers (1P, 1P+N  
or 2P depends on the model)

Input protection: ..... TVS, opto and power isolation on DMX input  
(**the throughput is not isolated and refreshed!**)

Operating temperature: .....  $10^{\circ}\text{C}$  to  $35^{\circ}\text{C}$  (RH: 0-90%, non-condensing)

Storage temperature: .....  $-10^{\circ}\text{C}$  to  $60^{\circ}\text{C}$

Dimensions: ..... 484 x 88 x 350 (mm) + connectors

Weight: ..... 12Kg



## Declaration of Conformity

We, PLS Electronics Limited declare under sole responsibility that the product:

**Product name:** .....Pegasus ® MiniECO 6 x 3,7KW dimmer  
**Product model** (*output variations*):.....S (Schuko), H (1x16-pole 'Harting'), H2 (2 x 16-pole 'Harting'), SX (1x19-pole Socapex), C (6 x 3 pole 16A CEE)  
**Serial Number:** .....n/a  
**Lot:** .....n/a  
**Item number:** .....One

to which this declaration relates is in conformity with the following standards:

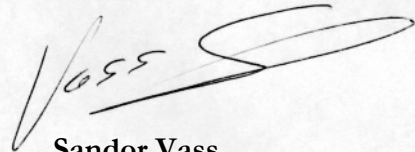
- **EN 55015-1** (Electromagnetic compatibility. Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment (CISPR 15:2000+CISPR 15:2000/A1:2001+ CISPR 15:2000/A2:2003)
- **EN 61000-6-2** (Immunity for industrial environments)
- **EN 60439-1** (Low-voltage switchgear and controlgear assemblies. Part 1: Type-tested and partially type-tested assemblies)

Therefore the upper indicated product **qualifies** the EU 73/23/EWG LV directive and the 89/33/EWG EMC directive, considering 93/465/EWG directive for CE.

**Place of issue:**  
Szekesfehervar, HUNGARY

**Date of issue:**  
01.03.2013

**Signature of authorised person:**



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